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ABSTRACT

Many studies have addressed the relationship of locus of control to gender, ethnicity, socioeconomic status and achievement. One area which has not received as much attention is the correlation of locus of control to the condition of being at-risk. Most research involving at-risk students has focused on identifying this group with in-school factors such as absenteeism, poor grades, learning disabilities, or behavior problems. This study not only proposes to verify previous research relating locus of control to gender and ethnicity, but also to confirm the findings that children considered at-risk have a greater tendency to have an external locus of control than their not at-risk peers. Such a conclusion would thus add a psychological dimension to the at-risk status. The results gathered from 114 fifth grade students revealed no significant relationship between locus of control and gender or ethnicity. A very significant relationship was observed between being at-risk and having a greater tendency toward an external locus of control. The implications of these findings to educators are discussed. (Contains 32 references.) (Author)

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Locus of Control:

Its Relationship to Gender, Ethnicity and At-Risk Students

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Running Head: AT-RISK STUDENTS AND LOCUS OF CONTROL

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Abstract

Many studies have addressed the relationship of locus of control to gender, ethnicity, socioeconomic status and achievement. One area which has not received as much attention is the correlation of locus of control to the condition of being at-risk. Most research involving at-risk students has focused on identifying this group with in-school factors such as absenteeism, poor grades, learning disabilities, or behavior problems. This study not only proposes to verify previous research relating locus of control to gender and ethnicity, but also to confirm the findings that children considered at-risk have a greater tendency to have an external locus of control than their not at-risk peers. Such a conclusion would thus add a psychological dimension to the at-risk status. The results gathered from 114 fifth grade students revealed no significant relationship between locus of control and gender or ethnicity. A very significant relationship was observed between being at-risk and having a greater tendency toward an external locus of control. The implications of these findings to educators are discussed.

Introduction

Much attention has been given to the psychological construct of locus of control since its introduction by social learning theorists in the 1950s (e.g. Crandall, Katkovsky & Crandall, 1965; Rotter, 1966; Shore, & Young, 1984). This construct addresses expectancy, specifically, the extent to which individuals perceive reinforcement as contingent upon their behavior versus contingent on forces outside of themselves. Thus, an individual who views success and failure as related to his or her actions is said to have a belief in internal control. In contrast, an individual who views outcomes as not contingent upon his or her actions, instead attributing events to luck, chance, fate or powerful others (peers, teachers, parents), is said to believe in external control. A large body of research has questioned the relationship of locus of control in schoolage children to variables such as age, gender, ethnicity, socioeconomic status, and academic achievement. While this study will focus primarily on the relationship between locus of control and at-risk children, it will also look at variables such as gender and ethnicity. In order to better understand the locus of control construct though, past studies must be reviewed.

Studies examining the relationship of locus of control to age have demonstrated a positive relationship between the two variables (Kifer 1975; Milgram, 1971; Nowicki & Strickland, 1973). One can postulate that, with experience, children become more skilled at manipulating their environment and thus see themselves as actors impacting and effecting their surroundings rather than being acted upon. Thus, the older the child, the greater the internal orientation. The tendency toward an internal locus of control has not only been found to correlate positively with chronological age, but also with mental age (Lefcourt, 1982). Research in this area has led some to conclude that "chronological age per se is not the most salient aspect of maturation with regard to locus of control. Rather, it is the growth of mental age, the extent of vocabulary development and usage that becomes associated with a sense of being able to determine the shape of one's life" (Lefcourt, 1982, p. 151).

Another variable often considered is that of gender. Many studies indicate a greater internality in girls than in boys, though results on the whole are sufficiently varied so as to appear inconclusive. Both Crandall, Katkovsky and Crandall (1965) and Shore & Young (1984) reported finding that girls, particularly in middle and

high school, had a general tendency to score more internally than boys. In their study of 99 fourth, fifth and sixth graders, Clifford and Cleary (1972) found a non-significant correlation between sex and locus of control score also indicating that girls tended to be more internal than boys. Opposing these findings, Flynn's study of kindergartners (1991) found girls to be significantly more externally controlled than boys, while Zytkoskee, Strickland & Watson (1971) and Payne & Payne (1991) found no significant interaction with gender. Gender, therefore, does not appear to be a conclusive predictor of locus of control.

Other variables of interest have been those of ethnicity and socioeconomic status. The assumption has been that people from groups with lower social power, whether they be from minority groups experiencing racial constraints and discrimination or from lower socioeconomic groups experiencing social constraints, will feel that they have very little control over their reinforcements. Thus, explains Rabinowitz (1978):

> ...individuals who are restricted by societal barriers and by limited access to opportunity are generally characterized by an external control expectancy. On the other hand, persons who are able to attain socially valued outcomes are much more likely to

have an expectancy of internal control. (p. 1339)

Many studies have demonstrated differences in locus of control orientation between different ethnic groups (e.g. Shore & Young, 1984; Brown, Furr, Fulkerson, Ware & Voight, 1984). In their study of 1953 fourth, fifth and seventh grade students, Shore and Young (1984) concluded that: "The White children were most internal of the ethnic groups, followed by the Native Americans, Mexican Americans, and Blacks in that order" (p. 15). Comparisons involving all four ethnic groups yielded a significant difference between White children and all other children ($p < .01$). In their study of third and sixth grade Black and White male and female leaders, Brown, Fulkerson, Furr, Ware & Voight (1984) determined White leaders to be more internally controlled than Black leaders. Examining White and African-American ninth-grade adolescents with low SES, Zytkoskee and Strickland (1971) also observed African-Americans to be significantly more likely to be external than their White peers. They conclude that:

> In considering internality-externality, it appears that the Black adolescent as opposed to the White is less self-confident that his own behavior is related to subsequent reinforcement.

> Moreover, with regard to delay of gratification, the Black adolescent also seems less trusting in the behavior of others who are sources of subsequent reinforcement. (p. 96)

Yet these results are not echoed by all studies: Milgram (1971), Solomon, Houlihan and Parelius (1969), and Payne and Payne (1989), found no significant main effects for race. Milgram postulates that his results might be partly explained by the fact that the population he studied was parochial school children and that these students might not be typical of the larger population. Solomon, Houlihan and Parelius explain that these differences might be due to the differences in the locus of control measures employed.

The correlation of locus of control and socioeconomic status has also been researched extensively. In such studies socioeconomic status is determined by one of two ways: some researchers employ specific occupational indexes to assign SES (e.g. Battle & Rotter, 1963; Rabinowitz, 1978; Stipek, 1980) while others use free and reduced lunch as an indicator of SES (Shore & Young, 1984). Holding ethnicity constant by studying an all-White sample, studies such as Stipek's (1981) demonstrate that middle-SES children were more internal entering school than lower-SES children. Holding race constant by

using only African-American subjects from different social classes, Rabinowitz's study (1978) supports such conclusions, revealing an extremely significant main effect for socioeconomic status ($p < 0.001$). The linearity of the trend, as explained by Rabinowitz, is noteworthy:

> ...as socioeconomic status rises from level I [low] through level IV [high], mean scores reflect a consistently greater expectancy of internal control. A test for trend showed that this linear relationship between social class and locus of control scores was significant ($p < 0.0001$). (p. 1343)

Shore & Young (1984), in their study of 1953 students, concluded that: "the largest effect in the analysis of variance was for SES, with mid-upper SES children being more internal than lower SES children"(p. 16). That socioeconomic status is a good predictor of locus of control is understandable since it can be assumed that persons from the lower social strata have less of an opportunity to manipulate and affect their environment than person's of high SES because of the types of occupations in which they engage and because of a lack of education and money.

Lastly, and most pertinent to this study, is the plethora research delineating the correlation of locus of control to academic

achievement. Studies undertaken to examine the relationship between these two variables have shown a positive correlation with an internal disposition predicting academic success (Crandall, Katkovsky & Crandall, 1965; Mc Ghee & Crandall, 1968; Clifford & Cleary, 1972; Johnson and Kanoy, 1980). Reviewing such studies, Bar-tal and Bar-Zohar (1977) conclude:

> Although the studies reviewed ... do not always provide consistent data, there is a firm trend indicating that the perception of locus of control is related to academic achievement. This trend suggests that the more internal the individual's orientation, the higher the individuals's achievement. (p. 182)

Stipek and Weisz (1981) echo this finding in their major review of the literature, adding that the correlation is still apparent with IQ held constant. Clifford and Cleary (1972) and Nowicki & Strickland (1973) are among those researchers who partialed out IQ and still found a significant relationship between the locus of control variable and achievement. Verifying this link, Garner and Cole (1986) examined low-SES achievers and underachievers to note if there existed a difference in their locus of control orientation. While the difference

was not as significant as expected ($p < .08$) , the study did show that achievers were more internal than underachievers.

Such research points to the logical motivational relationship that exists between locus of control and achievement. It is certainly understandable that a child who views himself or herself as in control of reinforcements will be more likely to engage in activities leading to them. Thus, a child who strives for good grades and teacher praise and perceives the attainment of these as controlled by his actions, will be more likely to delay gratification, be persistent in his or her effort and engage in success oriented behaviors. Conversely, it seems unlikely that a child who believes that results are mainly a function of luck, chance, or other individuals, will put forth much effort before or during a test, for example. Stipek and Weisz (1981) cite a number of studies that provide evidence of a relationship between locus of control and persistence in task situations. They also discuss studies demonstrating that children with an internal locus of control are more likely to delay gratification than children with an external locus of control. Thus, in their study of adolescents of low socioeconomic status, Zytkoskee & Strickland (1971) found that Black subjects were more external than White and were more likely to choose immediate

rewards over delayed rewards. These findings are significant because it is often necessary for children to delay or deny immediate gratification such as playing in favor of deferred reinforcement such as good grades and general academic success.

Also contributing to the relationship between an internal locus of control and achievement is the general tendency of such individuals to display achievement enhancing behaviors. Nowicki and Strickland (1973) found that "particularly for males, an internal score on the Nowicki-Strickland scales is significantly related to academic competence, social maturity, and appears to be a correlate of independent, striving, self-motivated behavior" (p. 153-4). Bar-tal and Bar-Zohar (1977) cite studies supporting the notion that internally controlled individuals engage in more achievement oriented behavior, concluding that "results indicated that internals, to a greater extent than externals, actively sought useful information and recalled more information in both skill-linked and ambiguous situations in order to perform the assigned task" (p. 191). Buck & Austin (1971) also observed that those children scoring high in internality were more highly rated by their teachers in positive classroom behaviors; these students had a tendency to be more active, striving, and directed toward classroom

achievement and approved classroom behavior.

When considering this correlation it is important to discuss the directionality of the connection. It is usually interpreted to indicate that an internal locus of control will positively affect school achievement. It is equally plausible that academic achievement affects locus of control. Drawing from the literature on the issue, Stipek and Weisz conclude that "the few causal analyses that have been done point to locus of control as a cause of achievement rather than the reverse. Conclusions must be made cautiously, however, as the data offer only tenuous support for locus of control as the cause rather than the effect." (p. 117)

Given the overwhelming evidence that an internal locus of control is related to academic achievement it is particularly important for educators to ask themselves whether or not a child's locus of control can be manipulated. A number of studies point to the changeability of this construct (e.g. deCharms, 1972; Arlin & Whitley, 1978; Walden & Ramey, 1983; Charlton & Terrell, 1987). In his overview of research concerning locus of control, Locus of Control: Current Trends in Theory and Research, Lefcourt (1982) cites a number of studies in which children's locus of control were made more

internal through changes in classroom procedures, counseling, and achievement motivation training. One particular study conducted by Charlton (1986) compared the relative impact of counseling and operant conditioning to increasing one's sense of internal control. During counseling sessions, recorded audioscripts depicting students in a position of failure were played. Pupils were to role-play and identify behaviors leading to the failure and then discuss, elect, and role-play alternative actions that could change the failure into success. If administering operant conditioning, teachers would provide tokens for appropriate behaviors accompanied by explanations of which behaviors were leading to reinforcement. While both were successful, counseling was the most successful of the two.

An extremely ambitious study addressing the changeability of the external disposition was undertaken by deCharms (1972) whose focus was on "personal causality", a very similar construct to that of locus of control. DeCharmes defined this construct as "the initiation by an individual of behavior intended to produce a change in his environment." (p. 96) Based on this notion, deCharms distinguished between an origin and a pawn dimension. Origins are individuals who are intrinsically motivated to initiate an intentional behavior as

opposed to pawns who are impelled from something external to behave. Based on the assumption that treating people like Origins would help them to conceptualize themselves as causal agents, deCharmes initiated training sessions for teachers on how to treat students as such. Steps included helping students identify realistic goals based on their strengths and weaknesses and the process to be taken in order to attain these goals. The results of such training were positive, denoting a significant increase in Origin behavior in those students who had teachers trained in the above areas.

A study particularly pertinent to this project addressed the impact on locus of control of a five-year, preschool, academic, efficacy-oriented, intervention program for students considered at-risk (Walden & Ramey, 1983). It was based on the assumption that environmental conditions could encourage the development of an internal locus of control, which in turn would influence academic achievement, independent of a child's IQ. Three groups of children were studied: a high risk intervention group that received preschool compensatory education, a high-risk non-intervention control group, and a comparison sample representative of the general population. The intervention group attended day-care where activities were

structured to insure quick mastery and instill a sense of competence. Activities were success-oriented and always accompanied by clear unambiguous feedback. To control for extraneous determinants of academic achievement, both the high-risk control and the high-risk intervention group received similar social-work, medical and nutritional services. The following conclusions were drawn:

> The results of the present study indicated that in the absence of specific intervention, children at high risk for academic difficulties tended to have lower perceptions of control over their low-risk classmates. However, when high-risk children participated in a long-term efficacy-oriented educational program their beliefs in personal control over successful academic performance increased to approximately the perceptions of control held by their low-risk classmates. Thus, a series of efficacious educational experiences apparently had the effect of heightening high-risk children's beliefs that their personal efforts were influenced in producing success in their school work (p. 354-5.)

When studying the relationship between IQ, achievement, and the students' attribution for success, Walden & Ramey (1983) also discovered that the student's attribution for success predicted academic

achievement while IQ did not. Other findings included a noticeable difference in classroom behavior when comparing the intervention group to the non-intervention group, where children from the high-risk intervention "were more internally motivated, task-oriented, and less distractible in the classroom" (p. 355).

The present study proposes to look at the relationship between locus of control and children who have been labeled at-risk, meaning at-risk of dropping out of school or completing their education with an inadequate level of skills. Concern with this general population has been mounting because of the large number of children it encompasses. Smey-Richman (1991) states that an estimated 25 percent of our youth (i.e. approximately 7,000,000 boys and girls between the ages of 10 to 17) are at high risk, and another 25 percent are at moderate risk.

This interest stems from the fact that, despite the numerous studies conducted to study the link of locus of control to other variables such as age, sex, race, SES and achievement, there are very few that have looked specifically at that variable's relation to children from the at-risk category (one exception: Payne & Payne, 1989). In addition, much research has involved attempting to identify at-risk students according to in-school factors (e.g. Smey-Richman, 1991; Hergert, 1991) while very

few have examined these students' psychological perceptions of themselves and their school experience. Common characteristics cited to describe students generally considered at-risk include: poor grades, retention in grade, repeated disciplinary action for behavioral problems, early school leaving, learning disabilities, absenteeism and drug addiction (Browne & Rife, 1991; Hergert, 1991; Smey-Richman, 1991). While these are certainly helpful characteristics in helping to identify these children, they provide little help in identifying them before maladaptive behavior has occurred and say nothing about their psychological characteristics.

This study hypothesizes that children considered at-risk will have a greater tendency to be externally oriented, thus verifying Payne & Payne's (1989) conclusions. Given the importance of internal orientation to achievement and given the understanding that locus of control orientation can be changed, a study supporting this hypothesis will help in designing programs for at-risk prevention and intervention.

Method

Subjects

For the purpose of this study, 114 students from an inner-city fifth

grade population were examined. The distribution of these students was as follows, with the number of at-risk students from each category in parentheses: 65 (26) girls, 49 (17) boys, 56 (25) African-American and Other ("and Other" here refers to the two Hispanic and one Asian child of the population) and 58 (18) White. In terms of socioeconomic status 58 (27) were of low SES and 56 (16) of middle or high SES. Out of these 114 students, 43, or 37 % of the population, were determined to be at-risk. The criteria used to determine a student's at-risk status were the ones used by the school when deciding whether or not to design a remediation matrix for those students entering the fifth grade. The most important criteria in making this determination was a student's scores on standardized tests given throughout his or her elementary schooling. These included the Kindergarten Screening, the Cognitive Abilities Test (CogAT) administered in first grade, and the Iowa Test of Basic Skills (ITBS) administered second through fifth grade. The selection criteria from the City Public Schools Plan for Remediation booklet is as follows:

1. According to the Standards of Quality for Public Schools in Virginia, students whose achievement places them in the bottom quartile nationally.

2. According to the Standards for Accrediting Public Schools in Virginia, students not reading at or above grade level (+ or - 5 grade equivalent months) after grade three and students whose achievement places them in the bottom quartile nationally.
3. According to the Resource Document for Remedial Instruction K-12 (p. ii), students in grades K-3 who are not succeeding, students whose achievement places them in the bottom quartile nationally, sixth grade students who do not pass the Virginia Literacy Passport Test, or students who need additional instruction in reading to profit from grade level instruction.

Scores within the bottom quartile in math and/or reading were critical in the determination of risk. Other characteristics of at-risk students noted in the booklet included: grade differential, grade inconsistency, failure to submit homework, incomplete assignments, lack of involvement/interest, lack of initiative, failure to make up missed assignments, erratic attendance pattern, inattentiveness in class and wasting time. While these were recognized as common characteristics, these dispositions were not critical in determining whether or not a child needed a remediation matrix.

Measurement

Students' locus of control was assessed by administering the Nowicki-Strickland Locus of Control Scale (NSLOCS) (Nowicki & Strickland, 1973) (See Appendix A). This paper-pencil instrument consists of 40 yes-no questions assessing attribution of control to academic and general situations. Internal consistency estimates for this measurement range from r = .63 to r = .81, depending on the grade level, and test-retest reliability ranged from .63 to .71 (Nowicki & Strickland, 1973). Questions include: "Most of the time, do you feel that you can change what might happen tomorrow by what you do today?", "Do you believe wishing can make good things happen?" and "Do you believe that you can stop yourself from catching a cold?". One point is given to each external response; thus, the higher the score the greater the tendency toward an external locus of control orientation. In order to rule out the possibility that some children might have difficulty reading the text, the measure was read aloud to all five classes.

Once the data collected, a t-Test was run on the students' mean and a Pearson's Correlation Coefficients were determined using gender, at-risk status, score and ethnicity as variables.

Results

General

When looking at the entire population (N=114), the results ranged from a minimum external locus of control score of 7 to a maximum score of 25. The locus of control mean was 16.23 (SD = 4.22). The median was 17.00 and the mode 18. Taking the score 20 as a cutoff point between an internal vs. external locus of control orientation, it should be noted that the above scores indicate a generally internal tendency.

Gender

No significant effect for gender was observed. The boys' mean on the NSLOCS was slightly higher (M = 16.39, SD = 4.20) than the girls' mean (M = 16.12, SD = 4.25).

Ethnicity

When considering ethnicity and locus of control, no significant relationship could be noted either. The mean score of African-Americans and Others (M = 16.23, SD = 3.92) was virtually identical to that of Whites (M = 16.24, SD = 4.5).

At-Risk Condition

The mean score for those students identified at-risk (n = 43) was 18.25 (SD = 3.81). Scores ranged from 10 to 25. In contrast, the mean for those children not considered at-risk (n = 71) was 15.01 (SD = 4.00). Scores ranged from 7 to 25. (See Figure B - 1 and 2 for distribution of scores). A t-Test was run to determine whether this difference in mean (15.01 vs. 18.25) was significant. The results of the Pooled Variance estimate indicated a t-value of 4.27 with a 2-tail probability of $p < .001$, thus indicating an very significant relationship between the two means (See Table C-1). Results from Pearson's Correlation Coefficient further supported the significant relationship between being at-risk and having a greater tendency toward an external locus of control. This measure yielded a correlation coefficient of $r = .3739$ significant to the $p < .01$ level (See Table C - 2).

Analyzing the data simply in terms of percentages is equally telling and provides information depicting what percentage of each population scored more or less external. For the purpose of such information, scores were divided into four categories: less than 10, between 10 and 15, between 15 and 20, and 20 and higher (See Table C-3). It is noteworthy to notice that in the at-risk category, 37% of those

students scored 20 and higher (scores indicating a definite external tendency) while only 14% of students in the not at-risk category scored in that range. When looking at percentages of students scoring 15 and higher on the NSLOCS (low internal scores and external scores), such scores account for 81% of the at-risk group and 54% of the not at-risk. Conversely, it is interesting to note that not a single child from the at-risk category received a high internal score (below 10) while such scores account for 6% of the not at-risk results.

Discussion

Limitations

Before discussing the results and their various implications, it is important to discuss some of the limitations of this study. One such limitation is related to the fact that the characterization of being at-risk refers very much to academic achievement and that the locus of control measure employed, the Nowicki-Strickland Locus of Control Scale, provided a measure of general expectancies, not simply academic. Some studies have indicated that a person's locus of control is situation dependent (Crandall, Katkovsky & Crandall, 1965). Thus, a child may feel that he or she has a significant influence on home factors, for

instance, but has little or no control over scholastic achievement. While a child's general expectancies are not completely insignificant and irrelevant when discussing at-risk children, it might have been more appropriate, particularly given the emphasis given to academic achievement when determining at-risk in this study, to administer a locus of control measure which assessed attribution of academic success and failures specifically.

A second limitation of this measurement is that it, as opposed to other measures, does not distinguish between attribution of success and failure. Some researchers have claimed that these may develop independently of one another (Crandall, Katkovsky & Crandall, 1965). Whatever the means of acquisition, such information might provide greater insight into the psychological make-up of students. Some studies have found than the measure of a child's attribution for failure, for instance, might actually be a better predictor of that child's achievement than that child's attribution for success or general attribution (Mc Ghee & Crandall, 1968). Knowing whether a child attributes failures rather than success, or vice versa, to his own actions will help to determine the intervention to be taken when attempting to change his perceptions. Thus, a child who views himself as responsible

for his failures but not his successes will have to be approached differently from a child who views himself as responsible for his successes but not his failures. This study does not address these differences.

There is a continuum of at-risk which is also not considered in this study. Certainly, a child who has scored in the bottom quartile in mathematics and English throughout his elementary school years is more at-risk than someone who scored in the bottom quartile in one subject for a year or two. This study does not differentiate between those children who might be more at-risk than others, though one might hypothesize that the greater the risk, the greater the tendency toward externality.

Lastly, another problematic area of this study is the method of identifying at-risk children: standardized tests are not a true measure of a student's ability or general achievement. The scores on such tests can vary dramatically based on factors that have little or nothing to do with a child's intellectual ability and achievement.

Conclusions and Implications

Having discussed these limitations, the results from this study

are nonetheless interesting and significant. This study observed no significant correlation between gender and locus of control. The mean measures for boys and girls on the Nowicki-Strickland Locus of Control Scale for Children were not significantly different (16.39 vs. 16.12). These results contradict the results from numerous other studies that have found girls to have a greater tendency toward an internal locus of control that boys (Crandall, Katkovsky and Crandall, 1965; Shore and Young, 1984; Clifford and Cleary, 1972). It should be noted, however, that on a scale from 1 to 40, the scores of both boys and girls tended toward internality. That this should be the case is not surprising given the age group of the children studied. As noted earlier, numerous studies have demonstrated the tendency toward developing a more internal orientation with age (e.g. Kifer 1975; Milgram, 1971; Nowicki & Strickland, 1973).

With regards to ethnicity, the results of this study found no significant difference between the mean score of African-Americans and Others and the mean scores of Whites (M = 16.23 vs M = 16.24). This contradicts the multitude of studies which have found African-Americans and other minorities to be more externally oriented than Whites (e.g. Shore & Young, 1984; Brown, Fulkerson, Fur, Ware &

Voight, 1984; Zytkoskee & Strickland, 1971). This might be partly explained by the lower to middle class character of the school. Because a recent law prohibiting access to the list of students receiving free or reduced lunch, it was impossible to ascertain the impact of socioeconomic status on these results.

Most noteworthy about this study is its confirmation of the initial hypothesis that at-risk children have a greater tendency than not at-risk students to have an external locus of control, and therefore attribute both academic and general occurrences to outside forces such as luck, fate, and powerful others. Because a child's at-risk categorization is highly correlated with academic achievement, and in this particular study almost entirely determined by academic performance, the results of this study have several implications. Two findings are particularly significant when discussing these implications: the knowledge that there is a positive correlation between academic achievement and an internal locus of control (Crandall, Katkovsky & Crandall, 1965; Mc Ghee & Crandall, 1968; Clifford & Cleary, 1972; Johnson and Kanoy, 1980), and the knowledge that children's locus of control can be changed (deCharms, 1972, Walden & Ramey, 1983; Charlton & Terrell, 1987). This knowledge has profound implications

when designing remedial and preventative programs for at-risk children. Given the fact that an internal locus of control will increase one's academic success, that locus of control can be changed, and that at-risk students have a tendency to be more externally oriented than their not at-risk peers, it is imperative that all those involved with children, whether they be parents, counselors or educators, strive to develop an internal locus of control in these individuals. As stated by Payne & Payne (1989, p.87-88): "The exciting thing about research in this area is that an affective variable has been isolated that has a predictable relationship with achievement and can be modified in the best interest of the student and learning."

Researchers studying the locus of control construct have identified a number of different strategies which may help foster children's internal locus of control. When teaching preschoolers, Flynn (1991) advocates using frequent hands-on activities which are specifically designed to enhance an understanding of the relationship between cause and effect. An other technique might include breaking down material into small, easily manageable steps, stressing mastery of each step and providing frequent feedback along the way. Feedback should be constructive, informing students of what needs to be

accomplished to successfully complete a task. Praise should attribute achievement to hard work rather than luck or low level of difficulty (e.g. "You did an excellent job with this assignment because you put so much time and effort into it..." vs. "Wasn't that easy?"). A teacher might also help students foster internal control through the teaching of particular cognitive and metacognitive strategies that could enhance their performance. (Smey-Richman, 1991)

When instructing teachers on how to treat students as origins, deCharms (1972) delineated four important steps, overlapping to some extent with the above suggestions. According to him,

> to help a person be an origin, you must help the person, (a) to determine realistic goals for himself; (b) to know his own strengths and weaknesses; (c) to determine concrete action that he can take now that will help him reach his goal; (d) to consider how he can tell whether he is approaching his goal, that is, whether his action is having the desired effect. (p. 97)

Beside specific instructional strategies, structuring the learning environment in a positive, origin-promoting manner which makes students feel active, responsible, and instrumental encourages the development of internal control. Thus, research by Ryan & Grolnick

(1986, p. 557) observed that:

> children who perceived their environment as more origin-like have significantly higher self-esteem and perceived academic competence; they evidence greater mastery motivation and ... see less of their outcomes in school and in general as in the hands of powerful others. Finally, they report in general more internal control over outcomes. (Ryan & Grolnick, 1986,p. 553)

It therefore appears that classrooms in which children feel that they have some control and flexibility will help develop in children an internal locus of control. One aspect of such a classroom might be a dimension of choice. This might include a choice of the order in which certain activities can be tackled (e.g. Wang & Stiles, p. 1976), or a choice of how to approach certain tasks or how to demonstrate mastery of a concept.

Lastly, researchers such as Smey-Richman (1991) stress the importance of teaching students to view failure in a constructive light. Students should use failure as informative of the efforts necessary to succeed. Thus,

> The message to teachers is clear. In addition to insuring that at-risk, low-achieving students have a certain number of

> successful experiences, teachers must also help these students understand the relationship between their behavior and their performance. The performance of low achievers will be optimized when they accept responsibility for their successes, and when they understand that effort and persistence can overcome failure. (Smey-Richman, 1991, p. 27)

In summary, this study has confirmed findings that children considered at-risk will have a greater tendency toward an external attribution of control. This is certainly not suggesting that an internal locus of control is the only cause of achievement. Nonetheless, studies have demonstrated that while not being the sole cause of achievement there exists a significant relationship between the development of an internal locus of control and achievement. Knowing this and that one's locus of control orientation can be manipulated, it is important that this psychological tendency be addressed in intervention and prevention programs geared toward at-risk individuals. The techniques mentioned above are certainly not exhaustive, representing only a few of the many approaches which can be employed when trying to instill in children an internal locus of control. Nevertheless,

whatever procedure they choose to employ, educators and counselors cannot ignore this dimension of locus of control and must strive to help children understand the direct relationship between their actions and subsequent consequences.

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Appendix A

1. Do you believe that most problems will solve themselves if you just don't fool with them? (YES)
2. Do you believe that you can stop yourself from catching a cold?(NO)
3. Are some kids just born lucky? (YES)
4. Most of the time do you feel that getting good grades means a great deal to you? (NO)
5. Are you often blamed for things that just aren't your fault? (YES)
6. Do you believe that if somebody studies hard enough he or she can pass any subject? (NO)
7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway? (YES)
8. Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do? (YES)
9. Do you feel that most of the time parents listen to what their children have to say? (NO)
10. Do you believe wishing can make good things happen? (YES)
11. When you get punished does it usually seem it's for no good reason at all? (YES)
12. Most of the time do you find it hard to change a friend's (mind) opinion? (YES)
13. Do you believe that cheering more than luck helps a team to win?

(NO)

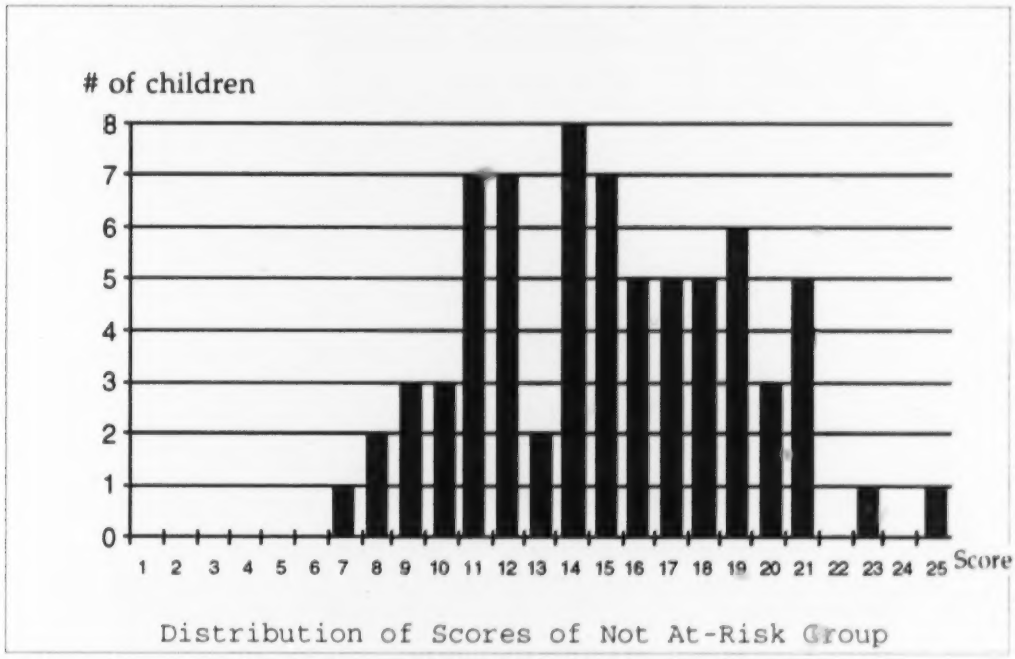
14. Do you feel that it's nearly impossible to change your parent's mind about anything? (YES)
15. Do you believe that your parents should allow you to make most of your own decisions? (NO)
16. Do you feel that when you do something wrong there is very little you can do to make it right? (YES)
17. Do you believe that most kids are just born good at sports? (YES)
18. Are most of the other kids your age stronger than you are? (YES)
19. Do you feel that one of the best ways to handle most problems is just not to think about them? (YES)
20. Do you feel that you have a lot of choice in deciding who your friends are? (NO)
21. If you find a four leaf clover do you believe that it might bring you good luck? (YES)
22. Do you often feel that whether you do your homework has much to do with what kind of grades you get? (NO)
23. Do you feel that when a kid your age decides to hit you, there's little you can do to stop him or her? (YES)
24. Have you ever had a good luck charm? (YES)
25. Do you believe that whether or not people like you depends on how you act? (NO)

26. Will your parents usually help you if you ask them to? (NO)
27. Have you felt that when people were mean to you it was usually for no reason at all? (YES)
28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today? (NO)
29. Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them? (YES)
30. Do you think that kids can get their own way if they just keep trying? (NO)
31. Most of the time do you find it useless to try to get your own way at home? (YES)
32. Do you feel that when good things happen they happen because of hard work? (NO)
33. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters? (YES)
34. Do you feel that it's easy to get friends to do what you want them to? (NO)
35. Do you usually feel that you have little to say about what you get to eat at home? (YES)
36. Do you feel that when someone doesn't like you there's little you can do about it? (YES)

37. Do you usually feel that it's almost useless to try in school because most other children are just plain smarter than you are? (YES)
38. Are you the kind of person who believes that planning ahead makes things turn out better? (YES)
39. Most of the time, do you feel that you have little to say about what your family decides to do? (YES)
40. Do you think it's better to be smart than to be lucky? (NO)

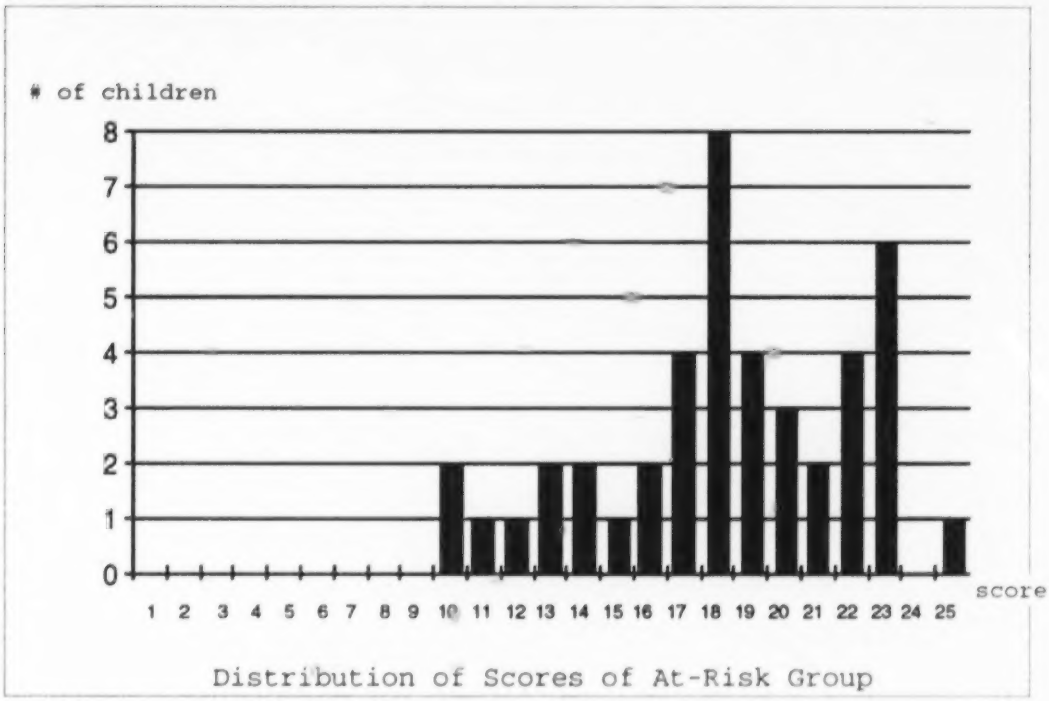
Appendix B

Figure 1 - Results on NSLOCS of Not At-Risk Group



Mean = 15.01 SD = 4.00 Median = 15 Mode = 14

Figure 2 - Results of At-Risk Group



Mean = 18.26 SD = 3.81 Median = 17 Mode = 18

Appendix C

Table 1 - T-Test on At-Risk and Not At-Risk Mean Scores

	# of cases	Mean	Standard Dev.	Pooled Variance Estimate t-value	degree of freedom	2-tail prob.
At-Risk	43	18.26	3.81	4.27	112	.001
Not At-Risk	71	15.01	4			

Table 2 - Pearson's Correlation Coefficients

	At-Risk	Score	Gender	Ethnicity
At-Risk	1	0.37**	-0.05	-0.14
Score	0.37**	1	0.03	0.001
Gender	-0.05	0.03	1	0.07
Ethnicity	-0.14	0.001	0.07	1

** Significant $p < .01$

Table 3 - Distribution of Scores Expressed as a Percentage of Each Group

Score Range	0-9	10-14	15-19	20 and up
# of At-Risk [1]	0	8	19	16
% of At-Risk	0	19	44	37
# of Not At-Risk [2]	6	27	28	10
% of Not At-Risk	8	38	39	14

1 $n = 43$
2 $n = 71$